

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A fault-tolerant server comprising:

- (a) a communications link;
 - (b) a first Central Processing Unit, (CPU),~~computing element~~ in electrical communication with the communications link and capable of transmitting a first information stream;
 - (c) a second CPU, ~~computing element~~ in electrical communication with the communications link and capable of transmitting a second information stream;
 - (d) a first Input/Output (I/O) subsystem, ~~local mass storage device~~ in electrical communication with the first CPU and with the communications link, configured to compare the first information stream and the second information stream; ~~computing element;~~ and
 - (e) a first ~~second~~ local mass storage device in electrical communication with the first I/O subsystem, ~~second computing element;~~
- wherein the first I/O subsystem selectively accesses the first local mass storage device in response to a comparison of the first and second information streams.
- ~~wherein the first computing element and the second computing element issue substantially similar instruction streams to at least one of the first local mass storage device and the second local mass storage device.~~

2. (Currently Amended) The fault-tolerant server of claim 1 further comprising:

- a second Input/Output (I/O) subsystem in electrical communication with the second CPU and with the communications link configured to compare the first information stream and the second information stream; and
 - a second local mass storage device in electrical communication with the second I/O subsystem,
- wherein the second I/O subsystem selectively accesses the second local mass storage device in response to a comparison of the first and second information streams. ~~wherein each~~

~~computing element comprises a respective Central Processing Unit (CPU) in electrical communication with a respective local input-output (I/O) subsystem.~~

3. (Currently Amended) The fault-tolerant server of claim 2 wherein at least one of the first I/O subsystem and the second local I/O subsystem are is in electrical communication with at least one of the first local mass storage device and the second local mass storage device.

4. (Original) The fault-tolerant server of claim 2 wherein the communications link comprises a respective switching fabric in electrical communication with the respective CPU.

5. (Currently Amended) The fault-tolerant server of claim 4 wherein the switching fabric is in electrical communication with at least one of the first ~~local~~ I/O subsystem and the second ~~local~~ I/O subsystem.

6. (Currently Amended) The fault-tolerant server of claim 5 wherein the switching fabric is in electrical communication with the other one of the first ~~local~~ I/O subsystem and the second ~~local~~ I/O subsystem.

7. (Currently Amended) The fault-tolerant server of claim 2 ~~+~~ further comprising a delay module in electrical communication with at least one of the first local I/O subsystem and the second I/O subsystem to delay transmission of at least one of the first and second information ~~substantially similar instruction~~ streams.

8. (Original) The fault-tolerant server of claim 1 wherein the communications link comprises a backplane.

9. (Original) The fault-tolerant server of claim 8 wherein the communications link further comprises a backplane link in communication with the backplane.

10. (Currently Amended) The fault-tolerant server of claim 1 wherein the first CPU computing element and the second CPU computing element further comprise a 1U rack-mount motherboard.

11. (Currently Amended) The fault-tolerant server of claim 1 wherein the first local mass storage device is located on a same motherboard as the first CPU computing element.

12. (Currently Amended) The fault-tolerant server of claim 2 wherein the second local mass storage device is located on a same motherboard as the second CPU computing element.

13. (Currently Amended) A method for accessing at least one of a first local mass storage device and a second local mass storage device in a fault-tolerant server, the method comprising the steps of:

(a) establishing communication between a first Central Processing Unit (CPU) computing element and a first local mass storage device capable of transmitting a first information stream;

(b) establishing communication between a second CPU computing element and a second local mass storage device capable of transmitting a second information stream; and

(c) comparing the first information stream and the second information stream through the use of a first Input/Output (I/O) subsystem, in communication with the first CPU and the first local mass storage device; and

(d) selectively accessing, by the first I/O subsystem, the first local mass storage device in response to a comparison of the first and second information streams.

(e) issuing, by the first computing element and the second computing element, substantially similar instruction streams to at least one of the first local mass storage device and the second local mass storage device.

14. (Currently Amended) The method of claim 13 further comprising the steps of: the step of executing the second computing element in lockstep with the first computing element.

(e) comparing the first information stream and the second information stream through the use of a second Input/Output (I/O) subsystem, in communication with the second CPU and the second local mass storage device; and

(f) selectively accessing, by the second I/O subsystem, the second local mass storage device in response to a comparison of the first and second information streams.

15. (Currently Amended) The method of claim 14 further comprising: 13 ~~wherein step (e) comprises the steps of:~~

(~~e-a~~) storing a datum in one of the first local mass storage device and the second local mass storage device, and

(~~e-b~~) storing the datum in the other one of the first local mass storage device and the second local mass storage device by mirroring software.

16. (Original) The method of claim 13 further comprising the step of communicating with a backplane.

17. (Original) The method of claim 13 further comprising introducing a parity bit to detect an error in the established communication.

18. (Original) The method of claim 13 further comprising the step of communicating with a 1U rack-mount motherboard.

19. (Currently Amended) The method of claim 14 ~~13~~ further comprising the step of communicating with at least one of the first I/O an input/output (I/O) subsystem and the second I/O subsystem over a switching fabric.

20. (Currently Amended) The method of claim 14 ~~13~~ further comprising the step of delaying the accessing of at least one of the first local mass storage device and the second local mass storage device.

21. (Currently Amended) An apparatus for accessing at least one of a first local mass storage device and a second local mass storage device in a fault-tolerant server, the apparatus comprising:

(a) a means for establishing communication between a first ~~Central Processing Unit (CPU) computing element~~ and a first local mass storage device ~~capable of transmitting a first information stream~~;

(b) a means for establishing communication between a second ~~CPU computing element~~ and a second local mass storage device ~~capable of transmitting a second information stream~~; and

(c) a first Input/Output (I/O) subsystem means, in communication with the first CPU and the first local mass storage device, configured to compare the first information stream and the second information stream; and

(d) a means for selectively accessing, by the first I/O subsystem, the first local mass storage device in response to a comparison of the first and second information streams.

(e) ~~means for issuing, by the first computing element and the second computing element, substantially similar instruction information streams to at least one of the first local mass storage device and the second local mass storage device.~~

22. (New) The method of claim 13 further comprising the step of executing the second CPU in lockstep with the first CPU.

23. (New) A server comprising:

a communications link;

a first Central Processing Unit, (CPU), in electrical communication with the communications link and capable of transmitting a first information stream;

a second CPU in electrical communication with the communications link and capable of transmitting a second information stream;

a first Input/Output (I/O) subsystem, in electrical communication with the first CPU and with the communications link, configured to compare the first information stream and the second information stream;

a first local mass storage device in electrical communication with the first I/O subsystem;

a second Input/Output (I/O) subsystem, in electrical communication with the second CPU and with the communications link, configured to compare the first information stream and the second information stream; and

a second local mass storage device in electrical communication with the second I/O subsystem;

wherein at least one of the first I/O subsystem and the second I/O subsystem selectively accesses at least one of the first local mass storage device and the second local mass storage device in response to a comparison of the first and second information streams.

24. (New) A method for accessing at least one of a first local mass storage device and a second local mass storage device in a fault-tolerant server, the method comprising the steps of:

establishing communication between a first Central Processing Unit (CPU) and a first local mass storage device capable of transmitting a first information stream;

establishing communication between a second CPU and a second local mass storage device capable of transmitting a second information stream;

comparing the first information stream and the second information stream through the use of a first Input/Output (I/O) subsystem, in communication with the first CPU and the first local mass storage device;

comparing the first information stream and the second information stream through the use of a second Input/Output (I/O) subsystem, in communication with the second CPU and the second local mass storage device; and

selectively accessing, by at least one of the first I/O subsystem and the second I/O subsystem, at least one of the first local mass storage device and the second local mass storage device, in response to a comparison of the first and second information streams.